



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/903,215	07/11/2001	Sergio Díaz De Leon	PGI6044P0181US	9964

32116 7590 03/17/2006

WOOD, PHILLIPS, KATZ, CLARK & MORTIMER  
500 W. MADISON STREET  
SUITE 3800  
CHICAGO, IL 60661

EXAMINER

BOYD, JENNIFER A

ART UNIT	PAPER NUMBER
----------	--------------

1771

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/903,215	DE LEON ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jennifer A. Boyd	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 and 24-30 is/are pending in the application.
- 4a) Of the above claim(s) 1-11 and 25-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-21 and 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 27, 2005 has been entered. The Applicant's Amendments and Accompanying Remarks, filed December 27, 2005, have been entered and have been carefully considered. Claims 12 and 19 are amended, claims 22 – 23 are cancelled, claims 1 – 11 and 25 – 30 are withdrawn and claims 1 – 21 and 24 – 30 are pending. In view of Applicant's amendment to the independent claims requiring that the heat-fusible fibers are activated, the Examiner withdraws all previously set forth rejections. After another search was conducted, additional prior art has been found which renders the invention as claimed unpatentable for reasons herein below.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 103***

3. Claims 12 – 21 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Welch et al. (US 6,022,818) in view of Simon et al. (US 5,632,072).

Welchel is directed to hydroentangled nonwoven composites (Title) useful as a fluid

Art Unit: 1771

management component in personal care absorbent articles such as diapers, training pants, incontinence garments, feminine hygiene products, bandages, wipes and the like (column 1, lines 10 – 23).

As to claims 12 and 19, Welch teaches a composite as shown in Figure 2. Welch teaches that the composite comprises three layers: top sheet 102, bottom sheet 104 and second top sheet 105 (column 5, lines 35 – 40). The Examiner equates second top sheet to Applicant's "first fibrous layer" and "liquid-acceptance layer", the top sheet to Applicant's "second fibrous layer" and "liquid-distribution layer" and bottom sheet to Applicant's "third fibrous layer". Welch teaches that the second top sheet, or "first fibrous layer", contains essentially matrix fibers (column 5, lines 55 – 60). Welch teaches that the matrix fibers can comprise staple or continuous fibers made from rayon, polyolefins and polyesters (column 2, lines 48 – 55). Welch teaches that the top sheet, or "second fibrous layer", comprises two regions: region 106 and region 108 (See Figure 2). Welch teaches that region 106 comprises essentially matrix fibers and region 108 comprises a mixture of absorbent fibers and nonwoven matrix fibers (column 5, lines 50 – 60). Welch notes that the matrix fibers may include several types of fibers such as blends of polyolefins and polyester fibers (column 2, lines 48 – 55). The Examiner equates the matrix fibers to Applicant's "fibers" of the "first fibrous layer". Welch additionally notes that the top sheet, or "second fibrous layer", can comprise bicomponent matrix fibers so that they can be subjected to a heating process to bond the top sheet and bottom sheet together (column 5, lines 40 – 50). The Examiner equates the matrix fibers to Applicants "(1) fibers" and the bicomponent matrix fibers to Applicant's "(2) heat-fusible fiber". Welch teaches that the composite can be hydraulic entangled (column 8, lines 15 – 35).

Art Unit: 1771

As to claim 13, Welch teaches that the bottom sheet, or Applicant's "third fibrous layer" and "liquid-retention layer", comprises a layer of absorbent fibers (column 5, lines 40 – 45). Welch teaches that the absorbent fibers comprise wood pulp fibers and rayon (column 4, lines 35 – 45).

As to claim 14, Welch teaches that the bottom sheet, or Applicant's "third fibrous layer" and "liquid-retention layer", comprises greater than or equal about 90 percent absorbent fibers (column 4, lines 65 – 69 and column 5, lines 1 – 10). Therefore, Welch teaches that 0 – 10% of the bottom sheet can comprise matrix fibers such as rayon, polyolefins and polyesters (column 5, lines 50 – 60).

As to claims 15 – 16 and 20 – 21, Welch teaches that the bottom sheet, or Applicant's "third fibrous layer" and "liquid-retention layer", can comprise, in addition to the absorbent fibers, superabsorbents (column 3, lines 35 – 40). Welch notes that the superabsorbent materials may be added to the composite fabric before the fluid-jet treatments and should remain inactive during the water-jet treatment and activated at a later time (column 9, lines 35 – 45).

As to claims 17 and 24, Welch teaches that the composite fabric may be brushed to provide a uniform exterior appearance and/or certain tactile properties (column 9, lines 20 – 30).

As to claim 18, it should be noted that upon hydroentanglement by nature, a plurality of apertures will be formed in the composite.

As to claims 12 and 19, Welch fails to teach the precursor web is positioned on a three-dimensional image transfer device having a foraminous forming surface defining an array of surface depressions and hydroentangling the web so that the web is imaged and patterned on the

Art Unit: 1771

image transfer device. Welchel fails to teach that the fabric as a result will have an array of upstanding projections extending above a network of liquid-accepting channels corresponding to the array of surface depressions defined by a foraminous forming surface. Welchel fails to teach that the nonwoven fabric is dried at an elevated temperature and activating heat fusible fibers to stabilize and enhance the retention of the three-dimensional image.

Simon is directed to a method for hydropatterning napped fabric (Title). Simon teaches that hydropatterning technique is used to emboss the screen pattern into the nap of napped fabric in order to produce an aesthetically pleasing surface texture and pattern (Abstract). The hydropatterning process employs one or more water curtains under pressure against a patterned screen (column 5, lines 25 – 35). Simon teaches that the process and apparatus can be used for composite fabrics and laminates including nonwoven and woven materials (column 5, lines 53 – 69). Simon teaches that additions or modifications may be made to a basic hydroentangling line such as mechanical brushing or abrading and post-treatment processing such as bonding, binder padding, finish treatments, stiffening, etc. (column 6, lines 15 – 20). Simon additionally notes that the patterned fabric may be treated with heat-setting to make the embossed effect more permanent (column 4, lines 40 – 50). It is the position of the Examiner that heat-setting would dry and activate the heat-fusible fibers and thus would inherently stabilize the nonwoven fabric.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to create a patterned image on the surface of composite of Welchel with the three-dimensional image transfer device of Simon motivated by the desire to create a nonwoven web having an aesthetically pleasing surface texture and pattern.

Art Unit: 1771

It would have been obvious to one of ordinary skill in the art at the time the invention was made to dry and activate the heat-fusible fibers as suggested by Simon in the web of Welchel motivated by the desire to make a patterned fabric where the embossed pattern is stabilized and more permanent.

As to claims 12, 14 and 19, Welchel in view of Simon discloses the claimed invention except for that the first fibrous layer has a basis weight of about 0.5 to 1.5 ounces per square yard, the second fibrous layer has a fiber denier of about 6 to 18 and the second fibrous layer has a basis weight of about 0.5 to 1.0 ounces per square yard as required by claim 12, the third fibrous layer has a denier of about 6 to 18 as required by claim 14 and the patterned nonwoven has an absorbent capacity, as a percentage of fabric weight to thickness ratio of at least 6.7 as required by claim 19. It should be noted that, as the fiber denier decreases, the nonwoven becomes softer but less durable. As the basis weight increases, the nonwoven becomes stronger but less pliable and soft. As the fabric weight to thickness ratio increases, the fabric becomes heavier and more pliable. In the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the first fibrous layer having basis weight of about 0.5 to 1.5 ounces per square yard, the second fibrous layer has a fiber denier of about 6 to 18 and the second fibrous layer has a basis weight of about 0.5 to 1.0 ounces per square yard as required by claim 12, the third fibrous layer has a denier of about 6 to 18 as required by claim 14 and the patterned nonwoven has an absorbent capacity, as a percentage of fabric weight to thickness ratio of at least 6.7 as required by claim 19 since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the

Art Unit: 1771

optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454 USPQ 233 (CCPA 1955). In the present invention, one would have been motivated to optimize the denier, basis weight and the fabric weight to thickness ratio to create an appropriately soft, pliable and strong nonwoven composite.

***Response to Arguments***

4. Applicant's arguments with respect to claims 12 – 21 and 24 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Boyd whose telephone number is 571-272-1473. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jennifer Boyd

March 8, 2006

*Ula Ruddock*  
**ULA RUDDOCK**  
**PRIMARY EXAMINER**